

Remarks

Claims 3-20 are now pending.

Claims 16-20 are added. All added claims are directly supported by the original claims.

Applicants appreciate the examiner's indication that Claims 5, 6, and 11 would be allowable if made independent. Claim 5 has been made independent. Claims 4 and 6-16 are dependent on Claim 5. Accordingly, Claims 4-16 are allowable.

The examiner had rejected Claim 3 as being obvious over Morris (US 4,898,838). Applicants have further amended Claim 3 to recite that the anode metal of all the Schottky diodes comprises titanium or titanium silicide. Claim 3 includes the limitations that "the at least one clamping Schottky diode being coupled between the collector and base of the transistor; and a resistor in series with the at least one clamping Schottky diode, wherein an anode metal of the at least one clamping Schottky diode comprises titanium or titanium silicide."

Morris discloses that the Schottky diode clamp anode metal is PtSi, palladium silicide, or iridium silicide (see Fig. 10 and col. 6, lines 42-60). All those anode metals provide a relatively high barrier height to prevent the transistor from going heavily into saturation (col. 5, lines 53-59). The Schottky diodes that are not clamps have an anode metal of TiW, which has a much lower barrier height than PtSi. Using two different anode metals is a requirement for the Morris structure in order for it to function adequately. Using two different metals adds complexity and cost to the structure.

The discussion of different barrier height metals is discussed in Applicants' specification on page 4, lines 23-28.

Applicants' structure of Claim 3 uses a Schottky diode clamp with a low barrier height anode metal comprising titanium or titanium silicide. This barrier height is too low for proper clamping of a transistor, so Claim 3 also recites a resistor in series with the clamping diode.

The resistor inserts an added voltage drop into the clamp, which allow **all** the Schottky diodes to have the same anode metal, thus saving complexity and cost.

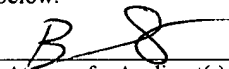
It is not obvious to modify Morris to use the same anode metal for the clamp and the other diodes, and Morris teaches against this by only specifying high barrier metals for the clamp diode anode.

Accordingly, Claim 3 and its dependent Claims 17-20 are respectfully submitted to be allowable.


The examiner objected to Fig. 3 since it did not have a "prior art" designation. Fig. 3 has been amended as requested.

If the examiner wishes to discuss this case, the examiner is invited to call the Applicants' attorney at (408) 382-0480 x202.

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